



REACH Impact on Aerospace Materials – U.S. Perspective



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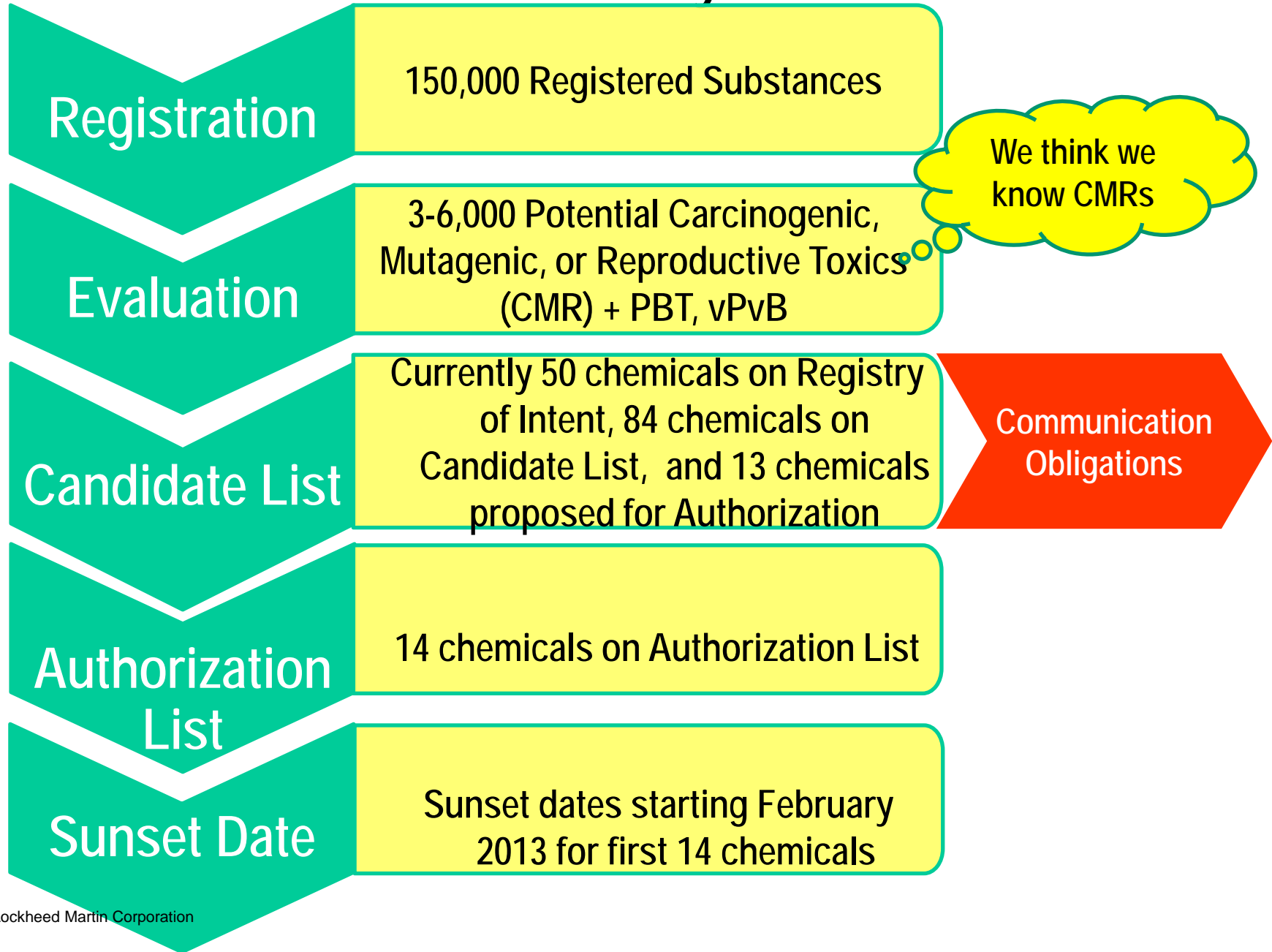


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REACH

- **R**egistration, **E**valuation, and **A**uthorization (Notification and Communication) for **C**hemicals
- Will impact all suppliers even those who don't directly sell to Europe
 - i.e. upstream users obligated to inform their suppliers of hazardous usages of chemicals
- Intent was to change obligation from Government to Industry to evaluate ESH-impact of chemicals
- Industry anticipates that REACH will eliminate multi-source suppliers and products from market
 - Suppliers will evaluate financial obligations of REACH versus product profit
- New Enforcement Agency: European Chemicals Agency (ECHA)
- While **Many** Assume This European Regulations Will Not Impact Their Supply Chain.....Consider the Following

REACH Covers Virtually All EU Chemicals



The CLP Parallel Regulation

Classification, Labelling, and Packaging (CLP) Regulation EC 1272 of 2008

- ***Harmonized classification system, labels, warning pictograms, risk phrases***
- ***Establishes these items as a part of the regulation – legally enforceable***

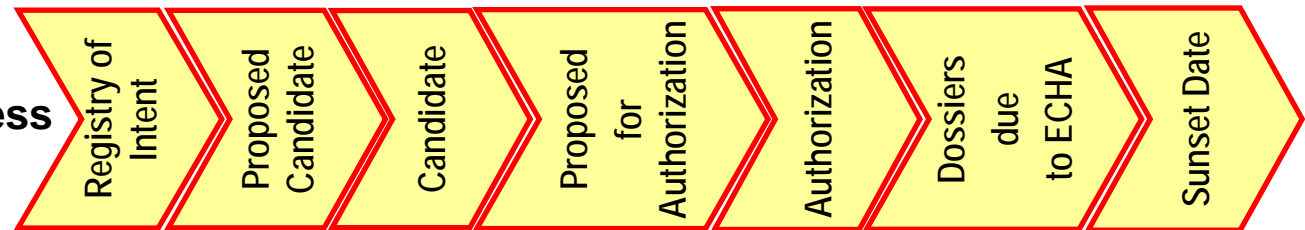
Index No	International Chemical Identification	EC No	CAS No	Classification		Labelling			Specific Conc. Limits, M-factors	Notes
				Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram, Signal Word Code(s)	Hazard statement Code(s)	Suppl. Hazard statement Code(s)		
024-002-00-6	potassium dichromate	231-906-6	7778-50-9	Ox. Sol. 2 Carc. 1B Muta. 1B Repr. 1B Acute Tox. 2 * Acute Tox. 3 * STOT RE 1 Acute Tox. 4 * Skin Corr. 1B Resp. Sens. 1 Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H272 H350 H340 H360FD H330 H301 H372 ** H312 H314 H334 H317 H400 H410	GHS03 GHS06 GHS08 GHS05 GHS09 Dgr	H272 H350 H340 H360FD H330 H301 H372 ** H312 H314 H334 H317 H410		STOT SE 3; H335: C ≥ 5 %	3

The Curious Case of Di-isobutyl Phthalate - OR -

How ECHA Can Greatly Accelerate Phase-Out

- In 2008, Di-isobutyl Phthalate (DIBP) was not a CMR but was a suspected endocrine disruptor
- CLP 1st Adaptation to Technical Progress (ATP) reclassified as Reproductive Category 1B - 10 August 2009
- Added as Candidate SVHC - 13 January 2010
- Added to Authorization list - 18 August 2011
- Sunset Date - 21 February 2015

Typical 6-8 Year Process

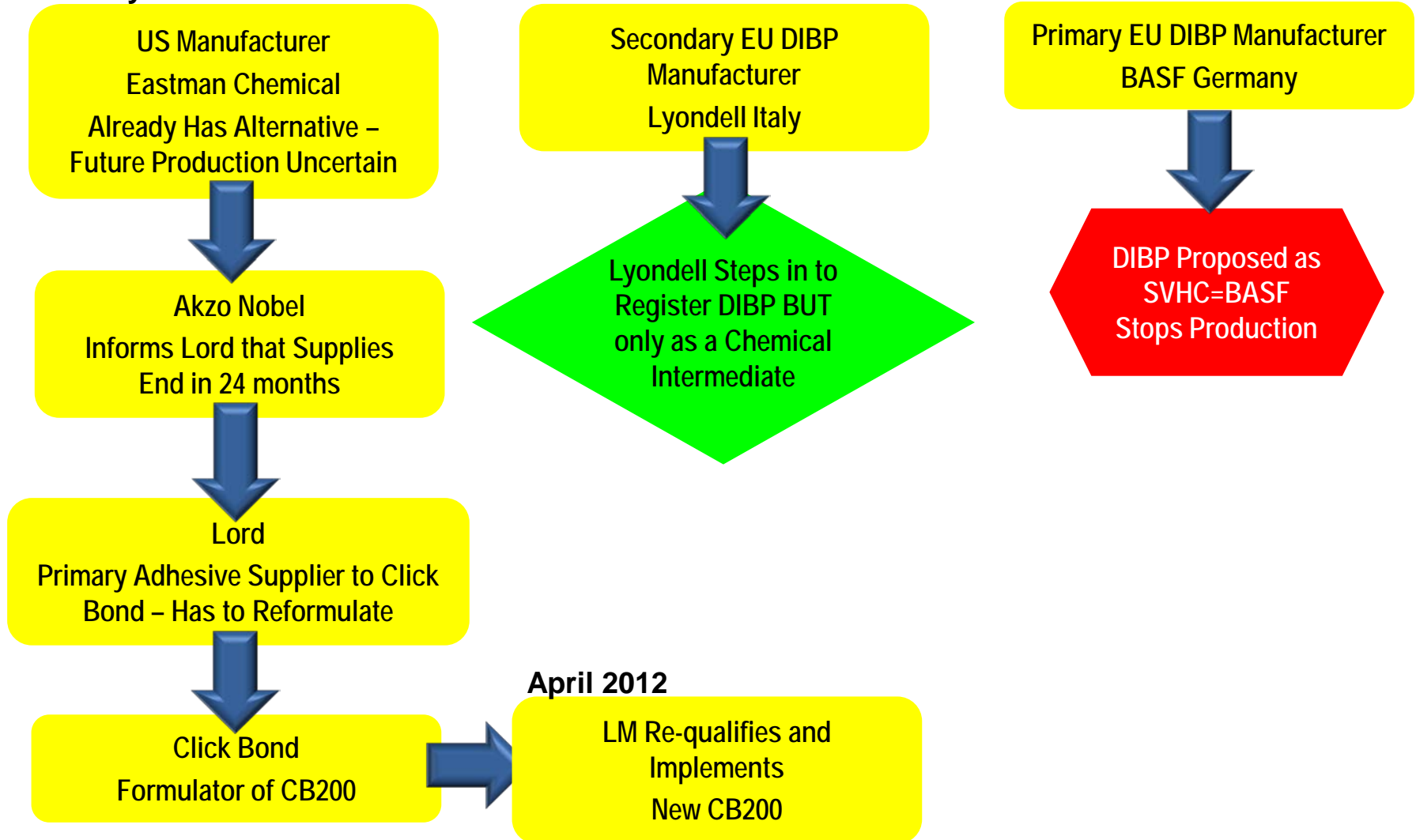


DIBP 5 Year Process

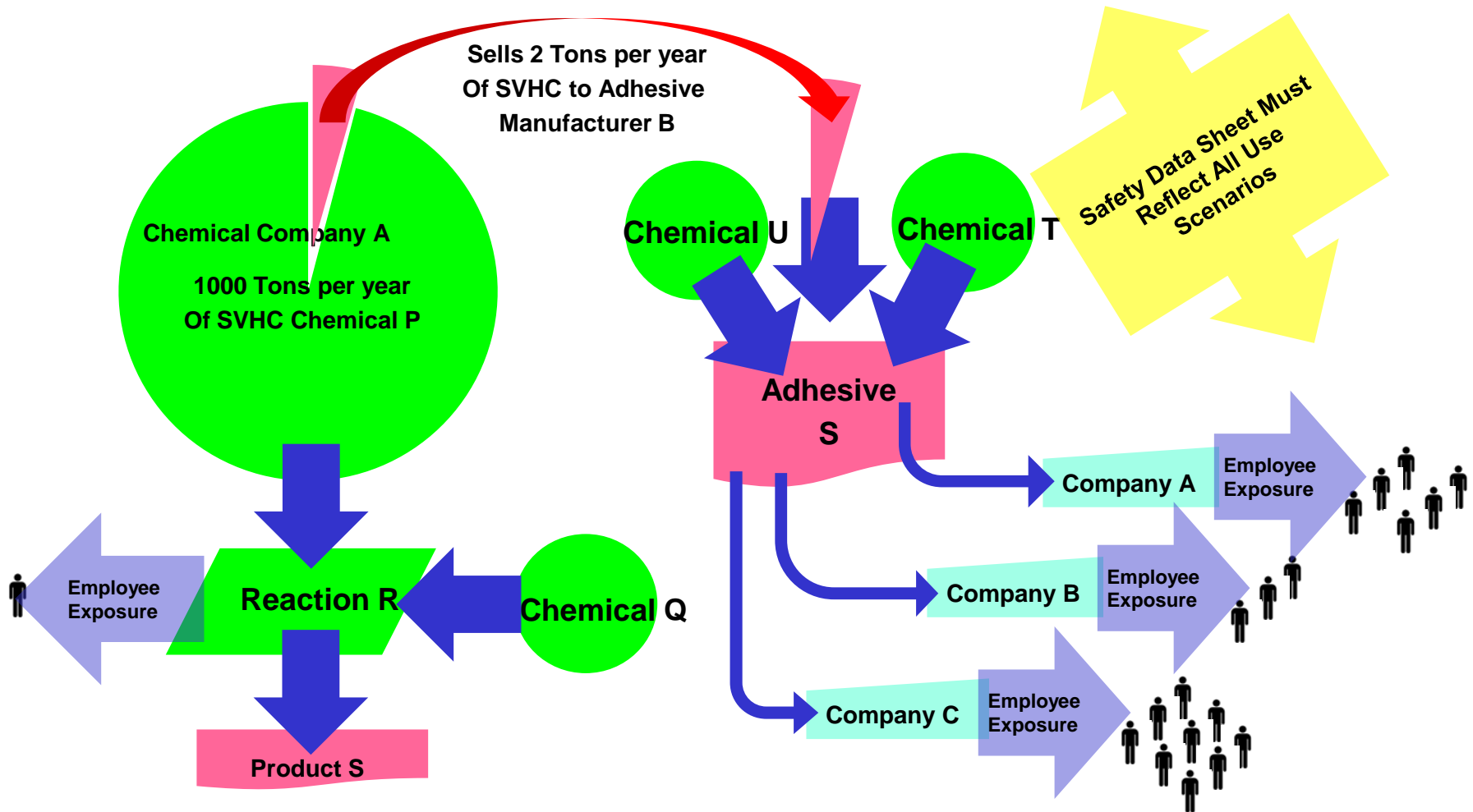


Impact of DIBP Re-Classification

January 2010



Risk to our Chemical Products

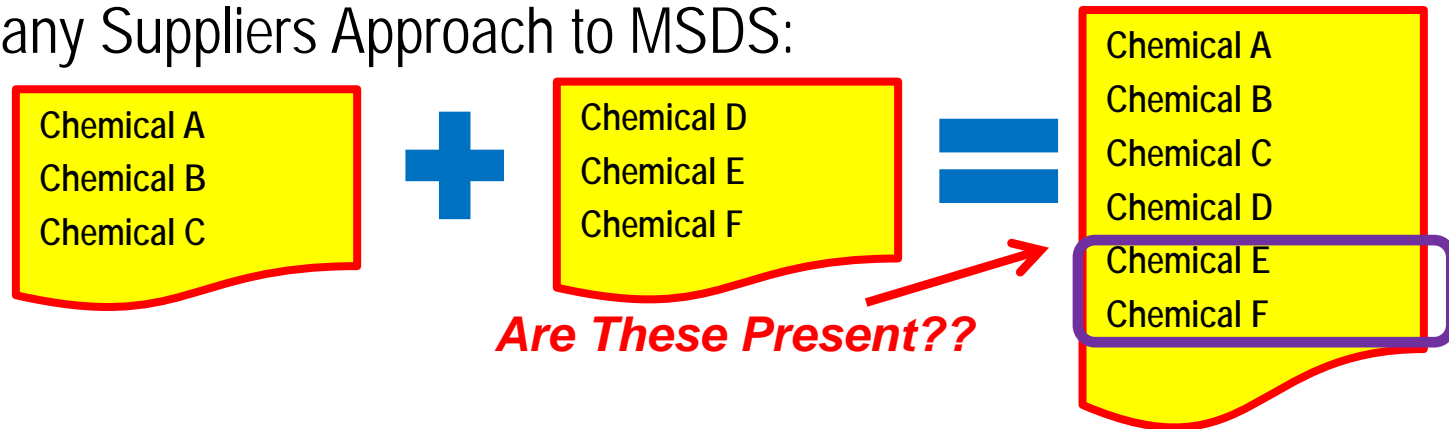


Chemical Company A Decides to Register Chemical P as an "Intermediate" Chemical only Used to React Other Chemicals - Minimal Human Exposure

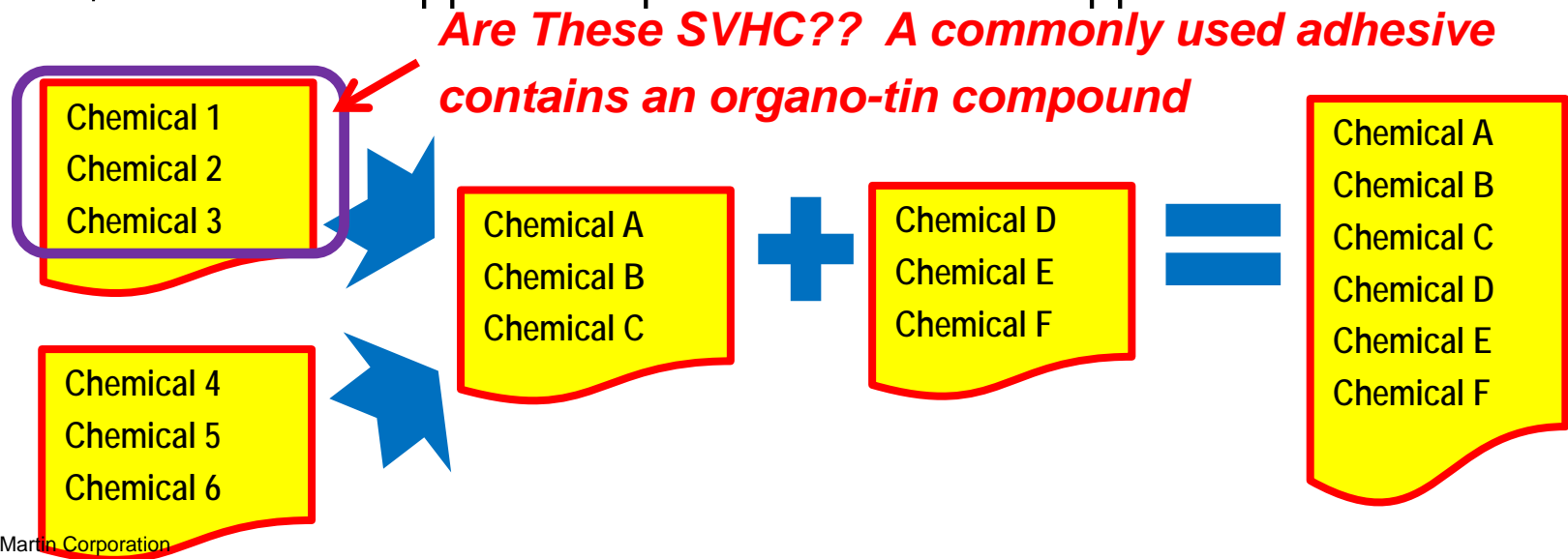
Is the Market Profitable Enough for Company A to Register Chemical P as an Adhesive for Manufacturer B – Or Does Manufacturer B Register Chemical P for Product S – Extensive Human Exposure

MSDS Assumptions

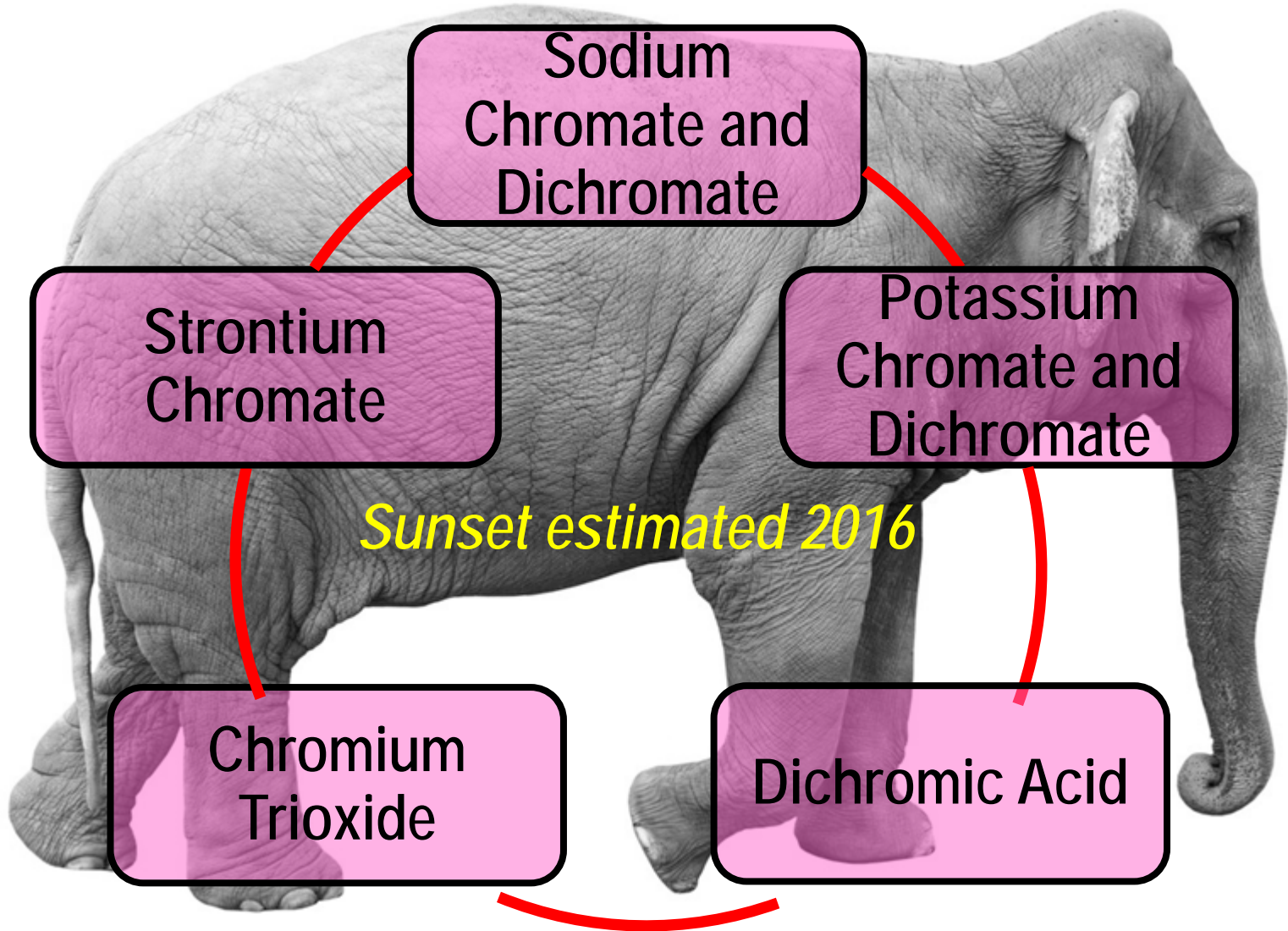
- Major Large Suppliers Analyze Products to Generate MSDS
- Many Suppliers Approach to MSDS:



- BUT, What Has Happened Upstream of Their Suppliers:



The 800 Pound Elephant in the Room



Where is Zinc Chromate? It wasn't Registered so is already "Restricted"

Other 100 Pound Problems



- **Phthalates – Used to make stuff flexible**
 - Aerospace Uses – sleeving, wire sheath, plastic panels, adhesives, etc, etc
 - Out of 30 most common, 11 are already in SVHC stages
 - EU intends to restrict all

• **Organic Nickel Compounds – Platings**



- Aerospace Uses – Plating, conductive sealants, catalysts
- REACH CLP ATP #1 Reclassified Over 100 compounds as Category 1 Carcinogens
 - REACH is required to restrict
 - Nickel Institute Fighting
- EPA IRIS Risk Assessment Due in 2013

Are We Heading Towards a Brick Wall?

- Can we rely on our suppliers to Register, Authorize, and submit Dossiers to support continued use?
 - Do they receive sufficient economic return to offset cost
 - Apparently not for zinc chromate
- Will the criticality of Aerospace products convince ECHA to exempt Hex Chrome or only Restrict (Annex XVII) at the last minute?
 - Will an exemption even keep the material available?

